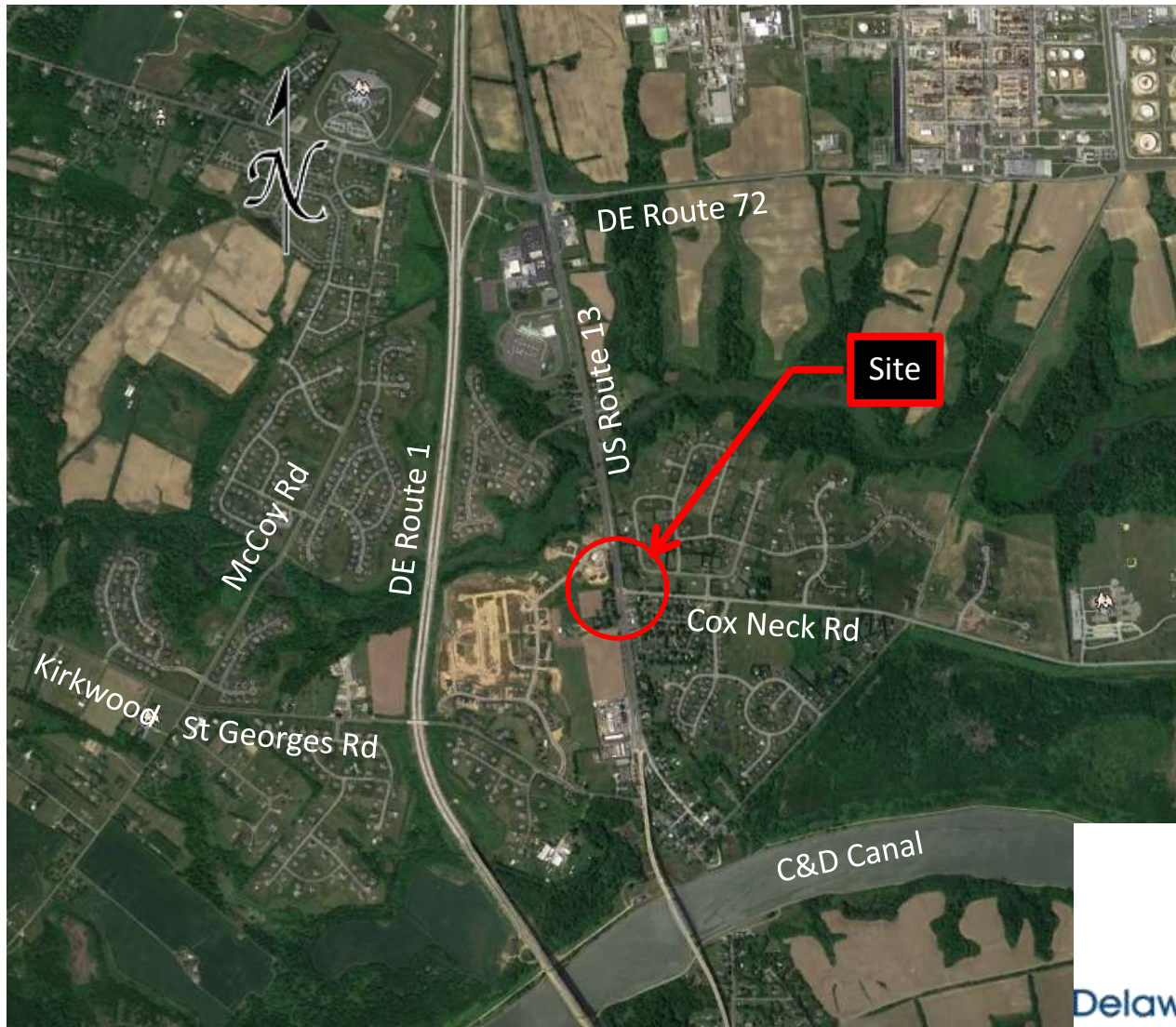
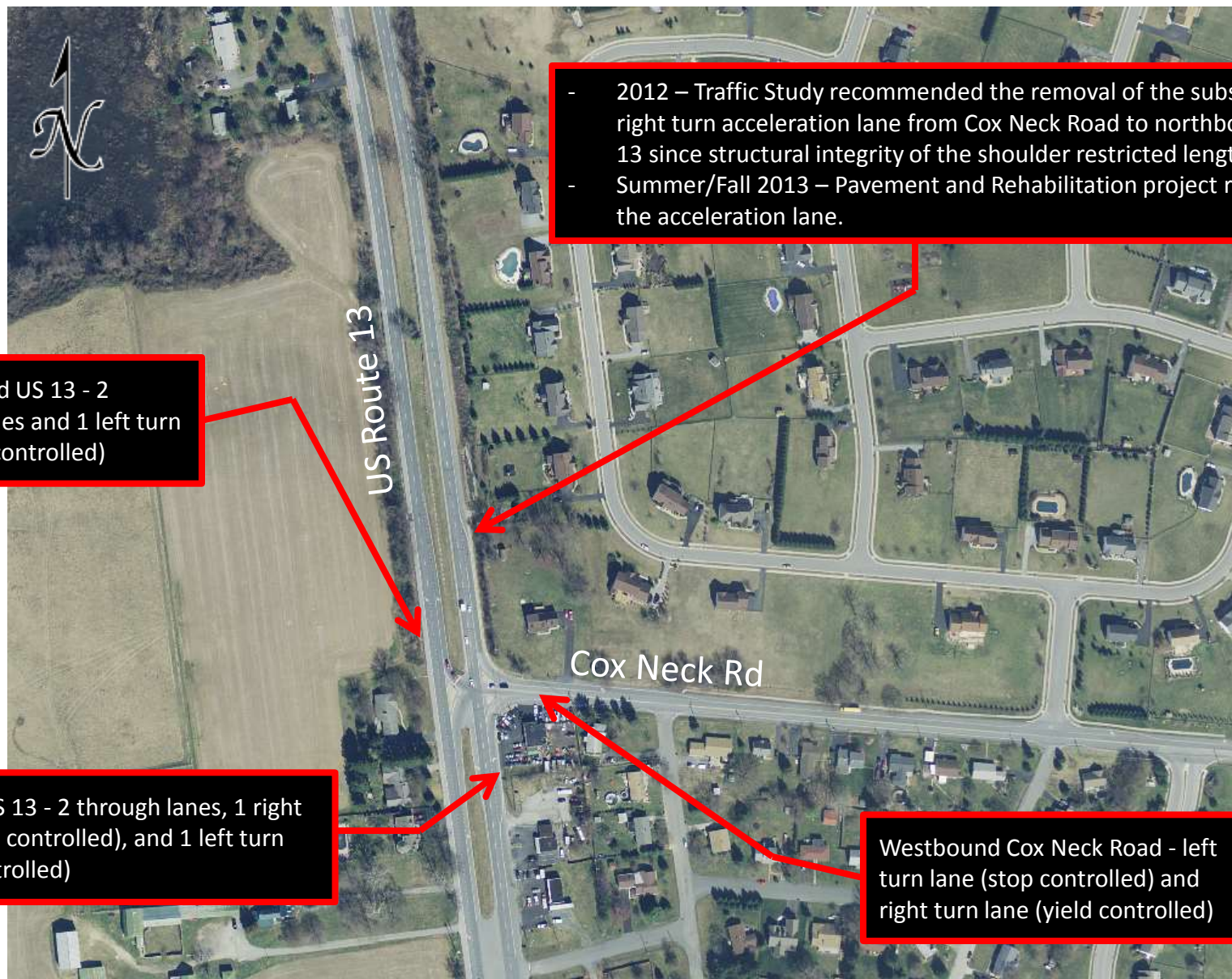


US 13 and Cox Neck Rd – traffic signal evaluation



Delaware Department
of Transportation

US 13 and Cox Neck Rd – traffic signal evaluation (Existing Geometry)



US 13 and Cox Neck Rd – traffic signal evaluation (Existing Crash Pattern and Operations)

Intersection Operations:

- The highest intersection delay and queue lengths are provided during the AM Peak Hours. The highest delay and queue was the southbound US 13 left turn which had a 108 seconds of delay and 425ft queue length.
- The AM peak hour of 7 – 8 AM has the highest number of right turn movements with 223 vehicles compared to the off-peak hour volume of 71 vehicles for 1 - 2 PM.
- The right turn lane vehicular queue from Cox Neck Road to northbound US 13 quickly clears and never spilled out to impact the adjacent lane.

Crash Patterns:

- 18 crashes between September 2013 and September 2016
 - 4 of those crashes were of the type that would be susceptible to correction by a traffic signal, such as an angle crash.
 - 6 of those crashes were classified as westbound rear-end type crashes. The change in the traffic flow at the intersection by introducing a traffic signal would be expected to address some of these crashes.



Sight Distance Restrictions:

- Stopping sight distance along Cox Neck Road is impacted when a bus parks prior to the intersection directly adjacent to the “stop ahead” sign.
- Cars illegally parking within the “no parking, stopping or standing” restriction along northbound US 13 may inhibit vehicles making the right turn from northbound US 13 onto Cox Neck Road and block sight lines of vehicles turning right from Cox Neck Road onto northbound US 13.

US 13 and Cox Neck Rd – traffic signal evaluation (Acceleration Option)



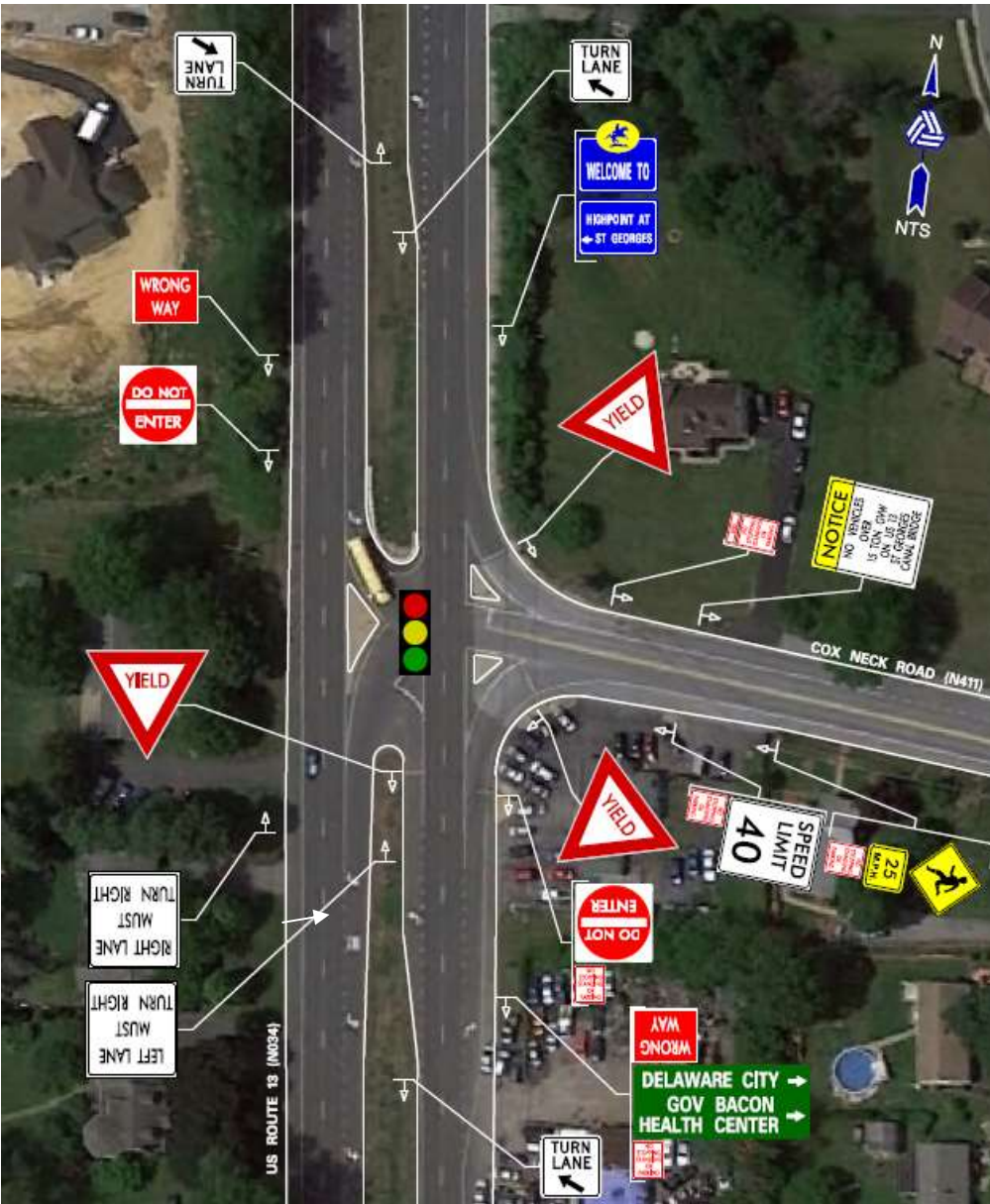
Full Acceleration Lane:

- Not pursued further at this time due to high cost and impacts related to right of way, utilities, and drainage.



US 13 and Cox Neck Rd – traffic signal evaluation

(Alternative 1 – Yield Controlled Right Turn from Cox Neck Rd)



- The existing yield controlled right turn from Cox Neck Rd would remain the same.
- Operationally:
 - Acceptable intersection delay and minimal queue lengths are provided during the AM and PM Peak Hours. (AM Peak Hour had approximately 13 seconds of delay and PM was 14 seconds). The highest delay and queue was the northbound US 13 through direction during the AM Peak Hour which had a 16 seconds of delay and 330ft queue length.

DISADVANTAGES:

- May not fully address Cox Neck Rd right turn crash pattern.

US 13 and Cox Neck Rd – traffic signal evaluation

(Alternative 2 – Signal Controlled Right Turn from Cox Neck Rd)



- The existing yield controlled right turn from Cox Neck Rd would change to be signal controlled. If this option is used, the right-turn movement may or may not have a right-turn-on-red restriction.
- Operationally:
 - Acceptable intersection delay and minimal queue lengths are provided during the AM and PM Peak Hours (similar to Alternative 1).

DISADVANTAGES:

- Westbound right turn delays may increase.

US 13 and Cox Neck Rd – traffic signal evaluation (Conclusion)

Short Term and Long Term Recommendations

- Short Term:
 - Request enforcement of the existing no stopping, standing, or parking restriction along northbound US 13 prior to Cox Neck Road to increase sight lines for turning vehicles
- Long Term
 - DelDOT recommends a traffic signal to be installed at the intersection of US Route 13 and Cox Neck Road. Exact configuration of Cox Neck Rd right turn movement to be determined during design phase of project.
 - Tentative Schedule: Design in 2017 and Construction in 2018